Title 15 - Mississippi State Department of Health

Part III – Office of Health Protection

Subpart 77 – On-site Wastewater

APPENDIX 10 DESIGN STANDARD: OVERLAND DISCHARGE

100 **INTRODUCTION**

Overland Discharge is a system used to dispose Advanced/Alternate treated effluent. Overland Discharge may be a single (1) point discharge or multi-point (2 or 4) discharge, with a level manifold. These discharge options can be gravity-fed or pressurized, with the use of a pump. Careful evaluation of the site, soils and geographical conditions are necessary to prevent runoff, erosion, groundwater pollution and nuisance conditions.

101 **DEFINITIONS**

101.01 Advanced Treatment System – an Individual On-site Wastewater treatment system that complies with Section 41-67-10. **MS Code of 1972, Annotated** Section 41-67-2(a)

101.02 Components – all physical, mechanical, and electrical components of any wastewater disposal system.

101.03 Discharge area – area of land receiving the treated effluent.

101.04 Distribution box – A connection source for a single inlet line to multiple distribution lines.

101.05 Manifold – 3" or larger Schedule 40 PVC pipe used in distributing a flowing discharge from some type of advanced treatment unit or treatment filter, such as a Plant Rock Filter or Sand Filter.

101.06 Maintenance – the inspecting and evaluating of an Alternative System or Advanced Treatment System. The replacement of any component registered with a specific Advanced Treatment System (i.e., aerator, diffuser, control panel, etc.).

101.07 Multi-point discharge – 2 or 4 discharge points that deliver effluent from a level manifold. (Figure I, Figure II and Figure IV)

101.08 Single point discharge – discharge line consisting of 1 point only.

102 DESIGN

102.01 The discharge area receiving the effluent shall have a minimum 6 inches of naturally occurring soil free of a restrictive horizon, redoximorphic feature or predominately-grey color (>50%) and shall be maintained to prevent surface accumulation or ponding. Overland Discharge is not recommendable on hydric soils conditions.

102.02 The texture of the subsoil material having the slowest permeability rates within 2 feet below the surface receiving effluent shall be used to determine setback.

102.03 The discharge area must be sufficiently sized to maintain the outermost edge of the effluent.

102.04 Slopes of greater than 20 percent shall not be considered for discharge areas unless justified by a Certified Engineer Evaluator

103 LOCATION/SETBACKS

103.01 The discharge area must be seeded, maintained with sod, permanent vegetative cover, or a wooded area.

103.02 Discharge area must be a minimum of:

1. Water Supply

    a. 100 feet from any public, private or individual potable water sources, unless protected by topographic features.

    b. 50 feet from any public, private or individual potable water source for all vessel(s) holding wastewater.

    c. 10 feet horizontal separation from any potable water line.

    d. 10 feet horizontal separation from any water meter.

    e. Potable water lines must not pass under or through any part of the wastewater disposal system which includes the collection and distribution of the wastewater or effluent.

2. Sensitive Waters

    a. 100 feet on slopes of greater than 8 percent

    b. Slopes of less than or equal to 8 percent (Table I)

3. Property Lines

    a. 50 feet down slope or same grade

b. 10 feet up slope.

4. Residence and Buildings

a. 25 feet from habitable

b. 15 feet from non-habitable

5. Additional Structures

a. 25 feet from porches, patios and decks

b. 10 feet from walkways, driveways and parking areas

c. 25 feet from swimming pools

d. 10 feet horizontal separation from an Advanced Treatment System

103.03 Discharge area shall not be located in depressed areas where surface water will accumulate. Provisions shall be made to minimize the flow of surface water over the effluent disposal area.

103.04 Where all or part of the treatment and disposal system is proposed to be installed on property other than the owner's, a deeded easement in perpetuity shall be legally recorded in the appropriate county. The deeded easement shall be obtained to include a sufficient area to permit access, construction and maintenance.

103.05 Deeded easements or right-of-way areas for utilities, surface or subsurface drainage, roads, streets, ponds or lakes shall not be used as available space for location of discharge areas.

103.06 No site utilizing a discharge area shall be approved which is located wholly within an area which is frequently flooded, swamp, marsh, wetland, or drain-way, etc. When a site is located partially within this area, that portion not directly affected may be considered for discharge area.

103.07 Treatment, disposal, disinfection and/or pump chambers shall not be located under dwellings or other permanent structures.

104 **TREATMENT**

104.01 Wastewater disposed of by Overland Discharge must meet the requirement established by *American National Standards Institute/National Sanitation Foundation* (*ANSI/NSF) International Standard Number 40* testing protocol, as set forth in Regulation Governing Residential Individual Onsite Wastewater Disposal Systems: Certification.

104.02 Treated effluent must be adequately disinfected as outlined in Appendix 11 (Design Standard for Disinfection).

105 DISTRIBUTION

The inlet and outlet on the tank (septic tank or ATU) must be 4 inch Schedule 40 pipe for a minimum of 3 feet onto undisturbed soil. Once the outlet pipe has extended a minimum of 3 feet onto undisturbed soil, it can then be reduced to a minimum of 3 inch Schedule 40 pipe for the entire discharge line.

105.01 Gravity Fed

1. Single point discharge:

   Gravity-fed discharge using a single point discharge line on 1% or greater slope

2. Distribution manifold:

   For gravity-fed multi-point discharge distribution by manifold, the level manifold must be constructed using flow diverting devices (Figure I) in such a manner to be self draining.

3. Distribution box (Figure III):

   A distribution box may used for multi-point discharge. The distribution box must be installed level to ensure equal distribution of effluent. Outlet lines should have equal slopes for a minimum of 5 feet after leaving the D-box. The D-box should have a baffle wall, or some means of reducing the pressure from the inlet flow.

105.02 Pressurized distribution

1. Distribution box (Figure III):

   A distribution box may used for multi-point discharge. The distribution box must be installed level to ensure equal distribution of effluent. Outlet lines should have equal slopes for a minimum of 5 feet after leaving the D-box. The D-box should have a baffle wall, or some means of reducing the pressure from the inlet flow.

2. Distribution manifold (Figure IV):

   If effluent is to be delivered to a level manifold under pressure, the distribution system shall be designed to provide pressure at the point of discharge not to exceed 5 pounds per square inch. This can be achieved by pumping directly into the head of the manifold or into a baffled distribution box.

Table I SETBACK REQUIREMENTS FROM SENSITIVE WATER

Surface Applications

Minimum Distance from the Water Edge

Soil Textural Class	Slope of Less Than or Equal to 8 Percent	Slope of Greater Than 8 Percent
Gravel	NOT APPLICABLE	
Coarse Sand Medium Sand Fine Sand Loamy Sand Sandy Loam	75 feet	100 feet
Light Loam Heavy Loam Silt Loam Sandy Clay Loam Light Clay Loam Heavy Clay Loam Light Silty Clay Loam Heavy Silty Clay Loam	50 feet	
Sandy Clay Silty Clay Clay	75 feet	

Figure I

Gravity-fed Manifold

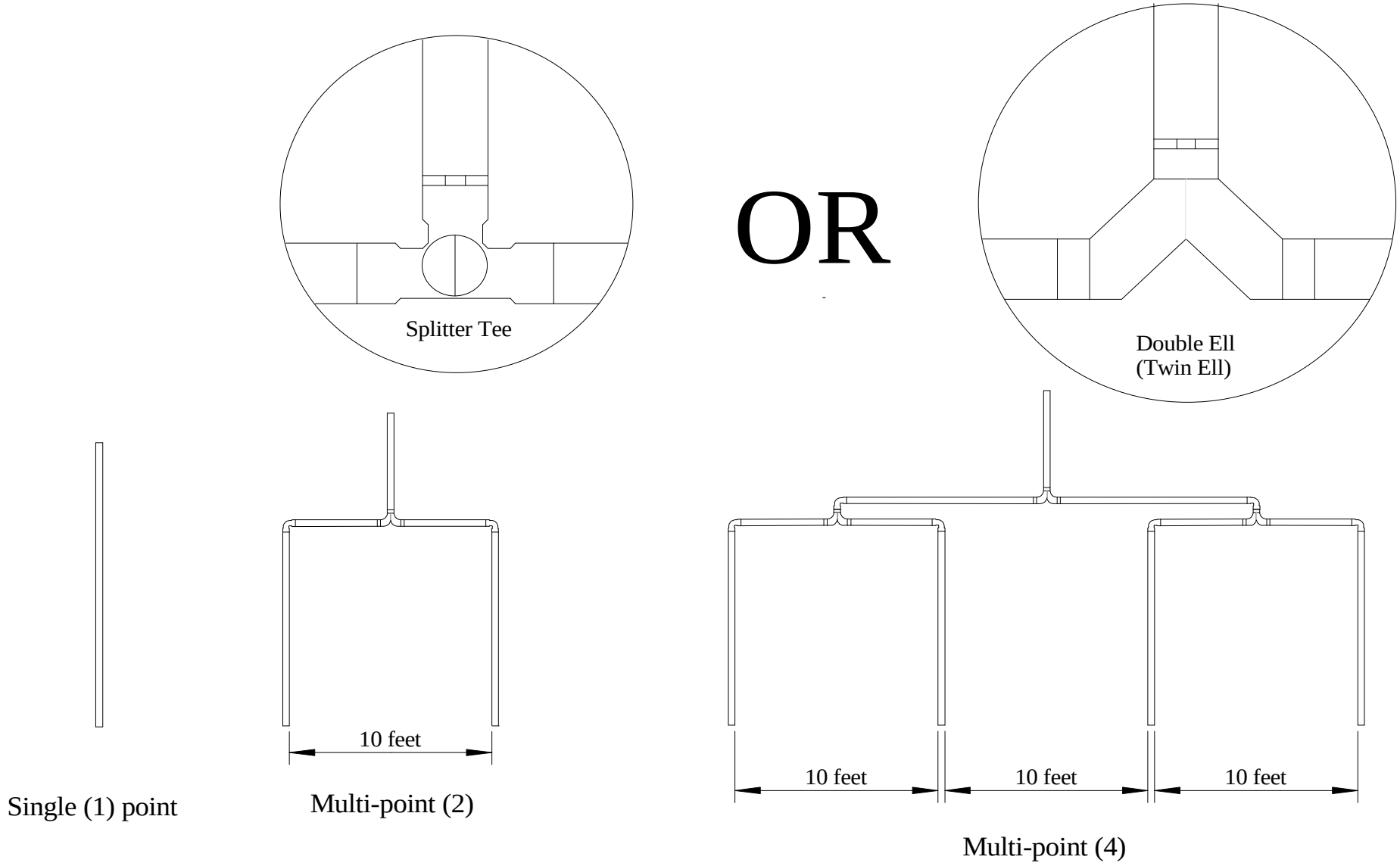
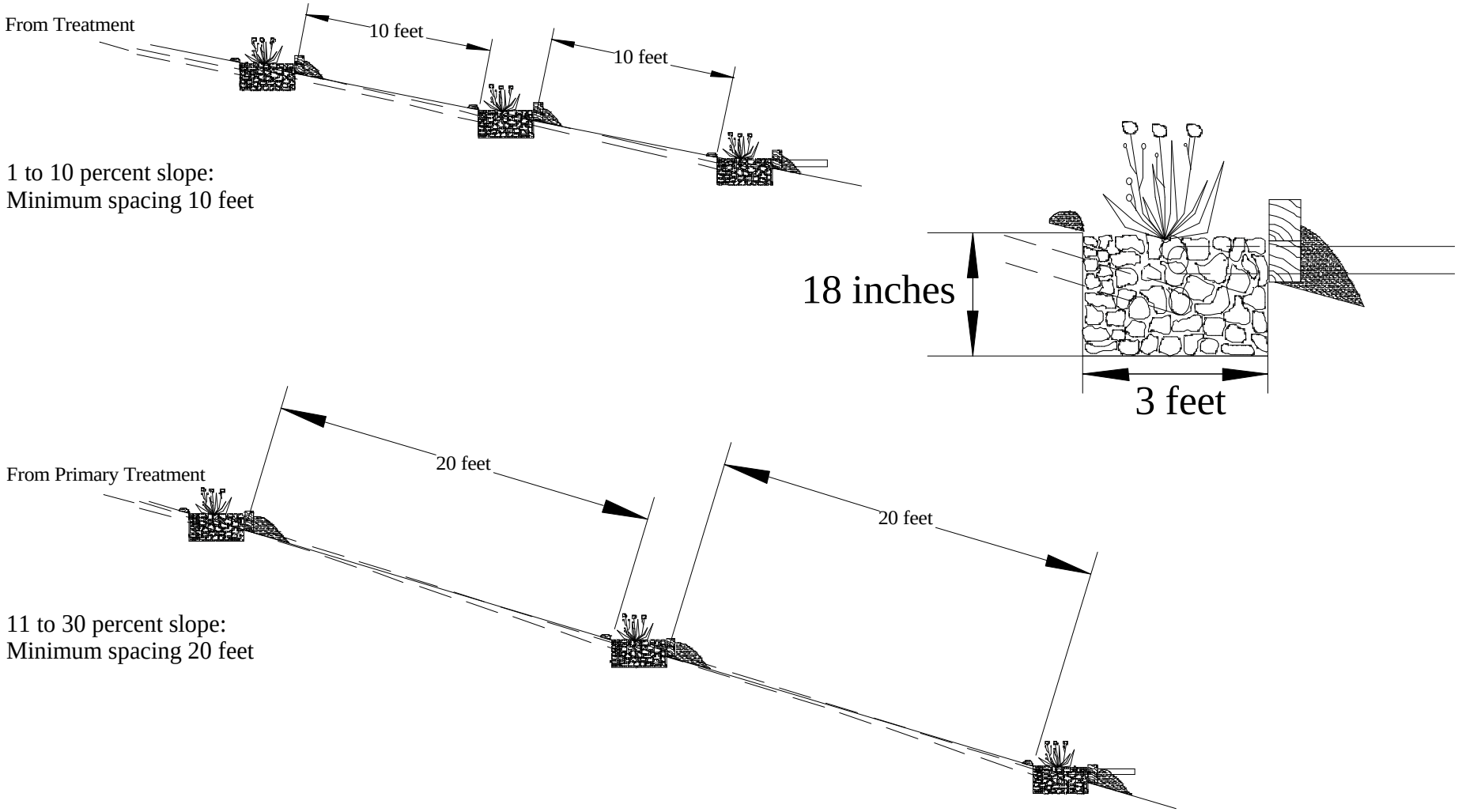
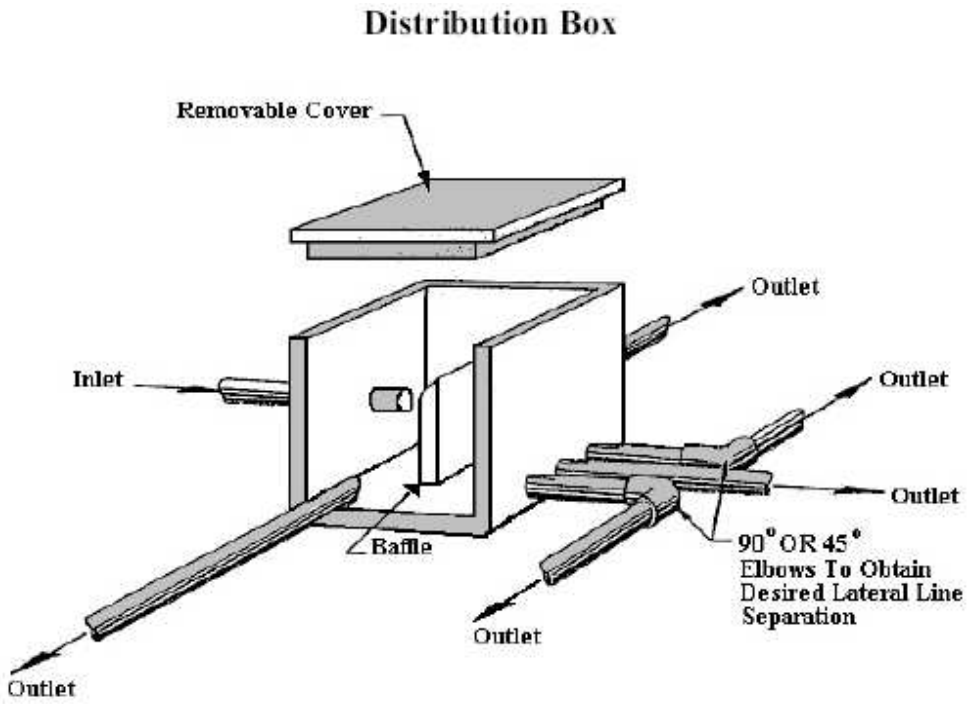


Figure II Terrace Plant Beds



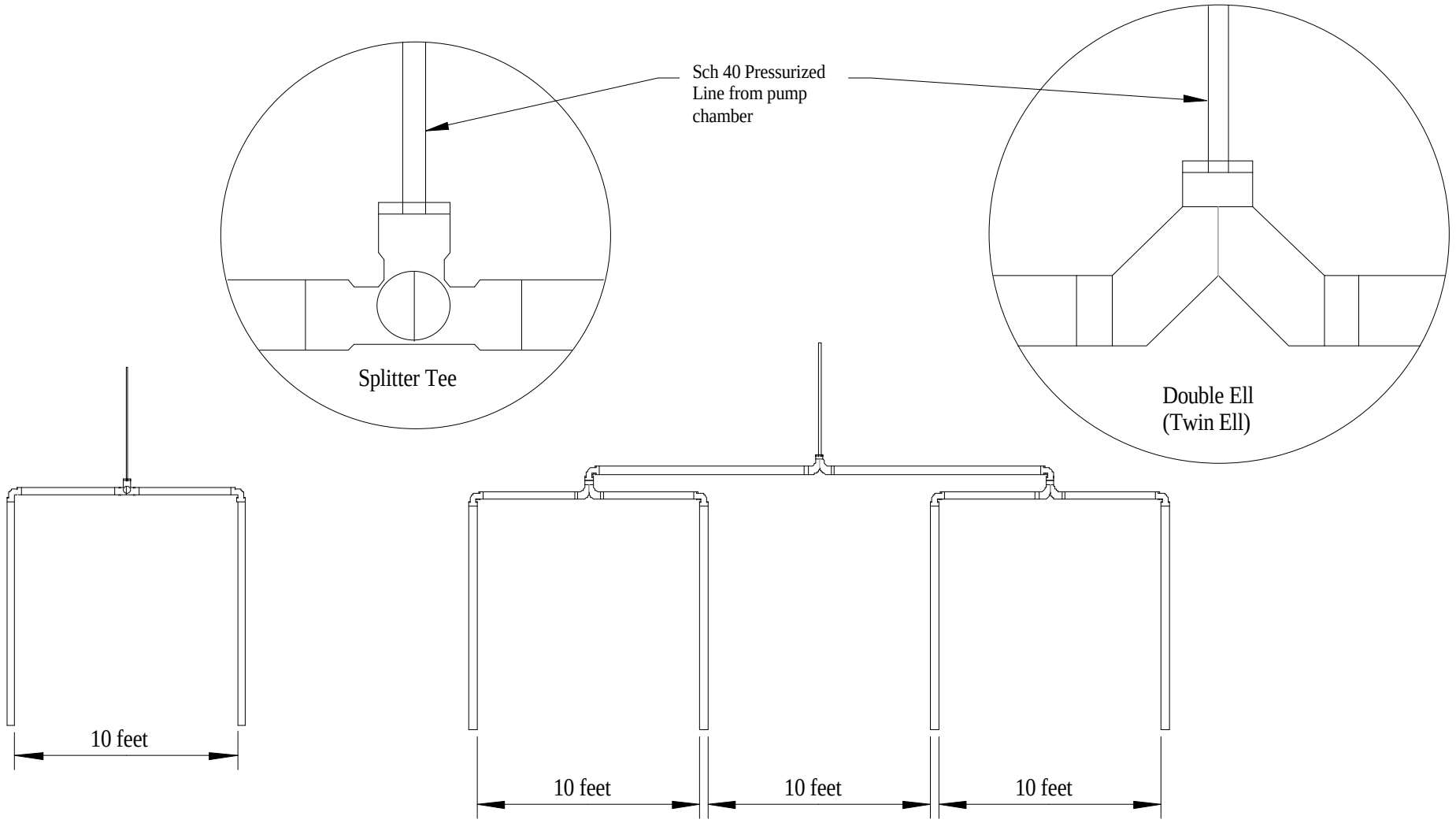
Further absorption of the effluent could be enhanced with the addition of plantings (canna, calla lilies, elephant ears, etc.) in a bed following the distribution manifold.

Figure III Distribution Box



- The inlet line into the distribution box may be gravity-fed or pressurized.
- Outlet lines should extend a minimum of 5 feet before changing elevation.

Figure IV Pressurized Distribution Manifold



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